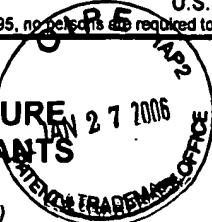


U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
 Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANTS <i>(use as many sheets as necessary)</i>			
 <i>1449A</i> <i>27 2006</i>			
Sheet	1	of	2
Complete if Known			
Application Number		09/898,850	
Filing Date		July 3, 2001	
First Named Inventor		Ungerboeck	
Group Art Unit		2634	
Examiner Name		D.V. Ha	
Attorney Docket Number		13226US02	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
DH		5,140,417	08.1992	Tanaka	
DH		5,253,078	10.1993	Balkanski et al.	

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)			
					T ⁶

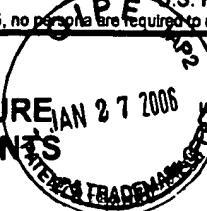
OTHER ART – NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published			
DH		T.M. Cover, et al., <u>Elements of Information Theory</u> , Wiley Series in Telecommunications, A Wiley-Interscience Publication, 1991, pgs. 1-542			
DH		J.M. Wozencraft et al., <u>Principles of Communication Engineering</u> , Chapter 6—"Implementation of Coded Systems," John Wiley & Sons, Inc., 1965, pgs. 363-484			
DH		D.A. Huffman, "A Method for the construction of minimum-redundancy codes," Proc. IRE, vol. 40, 1952, pgs. 1098-1101			
DH		M. Tomlinson, "New automatic equalizer employing modulo arithmetic," Electron. Lett., vol. 7, March 1971, pgs. 138-139			
DH		G. D. Forney, Jr., "Trellis shaping," IEEE Trans. Inform. Theory, vol. 38, March 1992, pgs. 281-300			
DH		P. Fortier, et al., "Multidimensional signal sets through the shell construction for parallel channels," IEEE Trans. Commun., vol. 40, March 1992, pgs. 500-512			
DH		A. K. Khandani et al., "Shaping multidimensional signal spaces— Part I: Optimum shaping, shell mapping," IEEE Trans. Inform. Theory, vol. 39, November 1993, pgs. 1799-1808			
DH		G. R. Lang et al., "A Leech lattice modem," IEEE J. Select. Areas Commun., vol. 7, August 1989, pgs. 968-973			
DH		G. Ungerboeck et al., Broadcom Corporation, "Coding for V.90 Issue 2," TR-30.1/99-11-064R1, Telecommunications Industry Association, Clearwater Beach, FL, November 29, 1999			

EXAMINER SIGNATURE		DATE CONSIDERED	05/11/06
--------------------	---	-----------------	----------

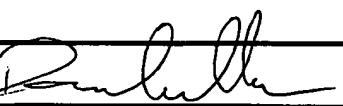
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450 Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. Send TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1800-786-9199) and select option 2.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	09/898,850
(use as many sheets as necessary)				Filing Date	July 3, 2001
Sheet	2	of	2	First Named Inventor	Ungerboeck
				Group Art Unit	2634
				Examiner Name	D.V. Ha
				Attorney Docket Number	13226US02

OTHER ART - NON PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
DV		G. Ungerboeck, "Channel Coding with Multilevel/Phase Signals," IEEE Transactions on Information Theory, vol. IT-28, no. 1, January 1982, pgs. 55-67
DV		G. Ungerboeck, "Trellis-coded Modulation with Redundant Signal Sets, Part 1: Introduction," IEEE Communications Magazine, Vol. 25, No. 2, February 1987, pgs. 5-11
DV		H. Harashima et al., "Marched-transmission technique for channels with intersymbol interference," IEEE Trans. Commun., vol. COM-20, August 1972, pgs. 774-780
DV		R. Laroia, N. Farvardin and S. Tretter, "On optimal shaping of multi-dimensional constellations," IEEE Trans. Inform. Theory, vol. 40, July 1994, pgs. 1044-1056
DV		G.D. Forney, et al., "Modulation and coding for linear Gaussian channels," IEEE Trans. Inform. Theory, vol. 44, No. 6, October 1998, pgs. 2384-2415
DV		G.D. Forney, et al., "Multidimensional constellations - Part 1: Introduction, figures of merit, and generalized cross constellations," IEEE J. Select. Areas Commun., vol. 7, No. 6, August 1989, pgs. 877-892
DV		ITU-T Recommendation V.90 (09/98)
DV		ITU-T Recommendation V.32 (02/98)

EXAMINER		DATE CONSIDERED
----------	---	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard St. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.